

Marger Johnson & McCollom, P.C.

1030 S.W. Morrison

Portland, OR 97205

(503) 222-3613

Attorney's Do. No. 1941-76

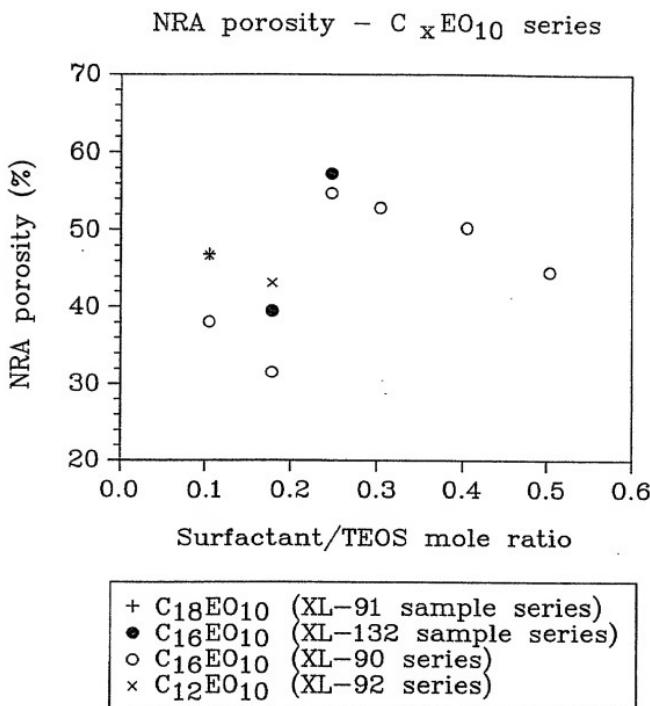


Fig. 1

$C_{12}EO_{10}$ based Films

Surfactant/TEOS mole ratio = 0.17

Effect of Dehydroxylation Treatments on k^1

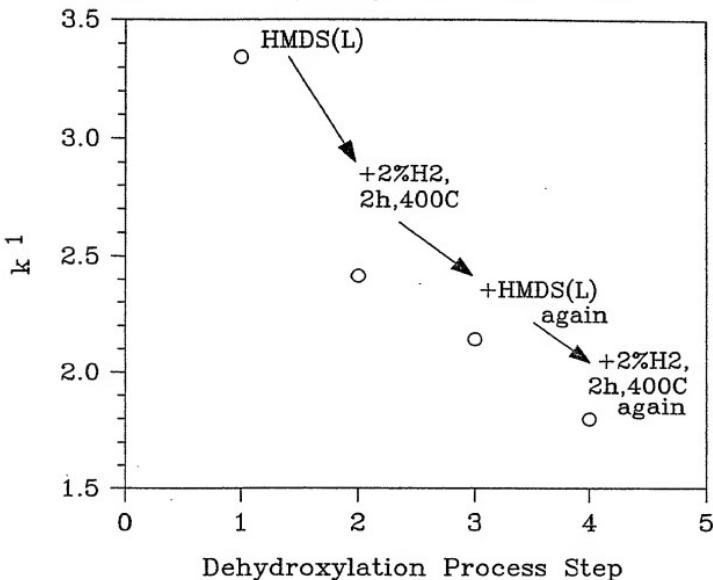


Fig. 2

$C_{16}EO_{10}$ based Films

Surfactant/TEOS mole ratio = 0.3

Effect of Dehydroxylation Treatments on k^1

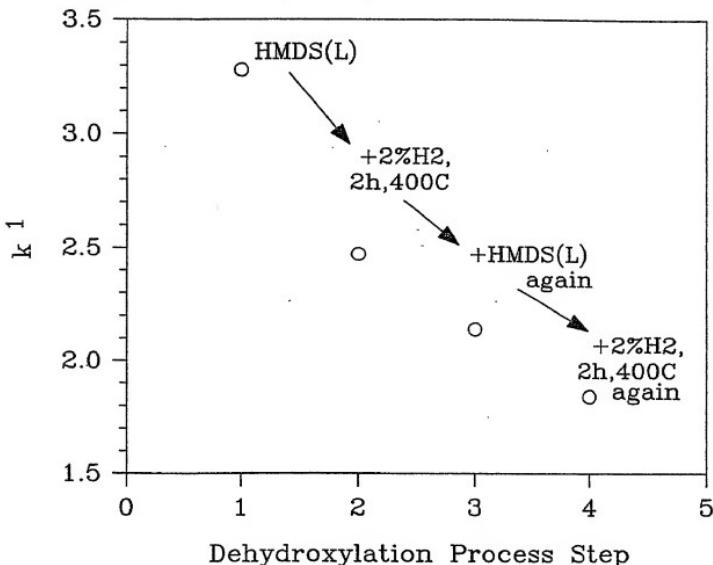


Fig. 3

In re patent application: Jun Liu, et al

Invention: MESOPOROUS SILICA FILM FROM
SOLUTION CONTAINING A SURFACTANT AND
METHODS OF MAKING SAME

Filing Date: April 18, 2000

Page 4 of 14

Marger Johnson & McCollom, P.C.

1030 S.W. Morrison

Portland, OR 97205

(503) 222-3613

Attorney's Do. No. 1941-76

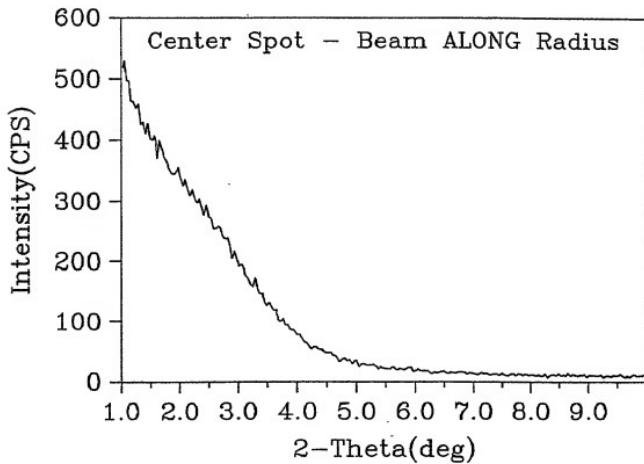


Fig. 4a

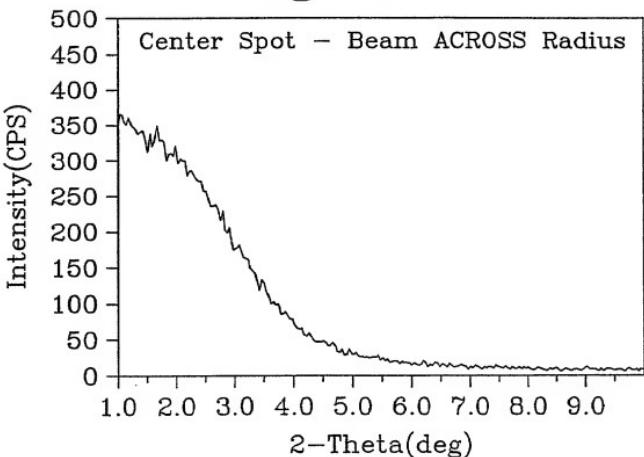


Fig. 4b

In re patent application: Jun Liu, et al

Invention: MESOPOROUS SILICA FILM FROM
SOLUTION CONTAINING A SURFACTANT AND
METHODS OF MAKING SAME

Filing Date: April 18, 2000

Page 5 of 14

Marger Johnson & McCollom, P.C.

1030 S.W. Morrison

Portland, OR 97205

(503) 222-3613

Attorney's Do. No. 1941-76

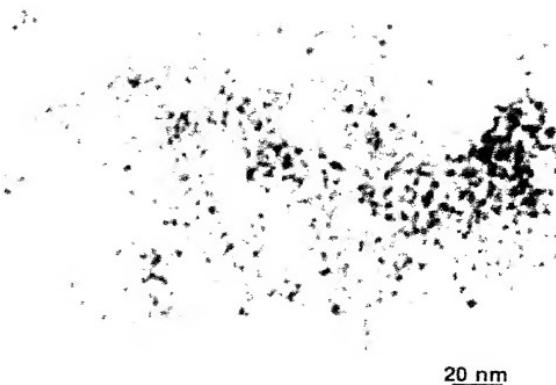


Fig. 5

In re patent application: Jun Liu, et al

Invention: MESOPOROUS SILICA FILM FROM
SOLUTION CONTAINING A SURFACTANT AND
METHODS OF MAKING SAME
Filing Date: April 18, 2000
Page 6 of 14

Marger Johnson & McCollom, P.C.
1030 S.W. Morrison
Portland, OR 97205
(503) 222-3613
Attorney's Do. No. 1941-76

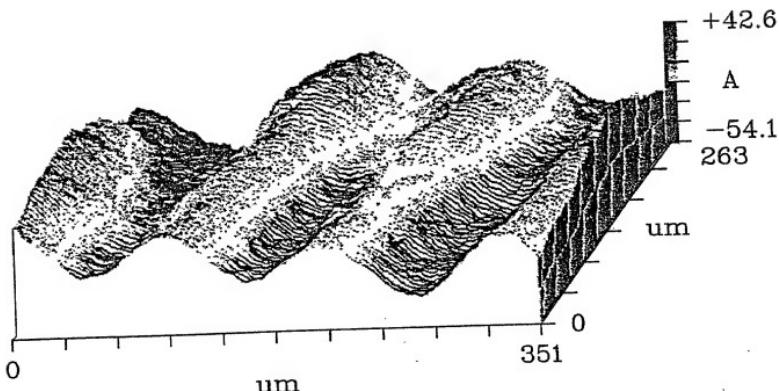


Fig. 6a

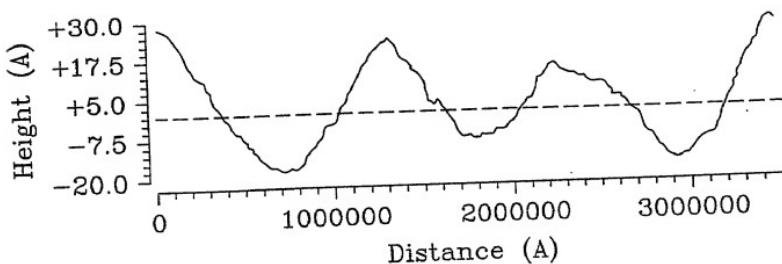


Fig. 6b

Modulus between 14 and 17 GPa
obtained for 50–300 microNewton loads

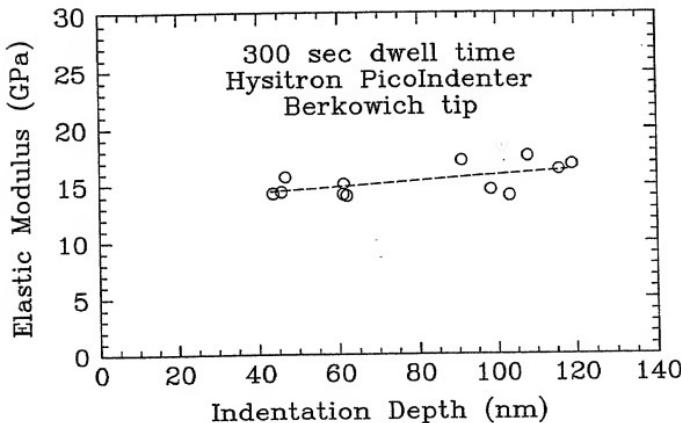


Fig. 7

In re patent application: Jun Liu, et al
Invention: MESOPOROUS SILICA FILM FROM
SOLUTION CONTAINING A SURFACTANT AND
METHODS OF MAKING SAME
Filing Date: April 18, 2000
Page 8 of 14

Marger Johnson & McCollom, P.C.
1030 S.W. Morrison
Portland, OR 97205
(503) 222-3613
Attorney's Do. No. 1941-76

TRADE SECRETS

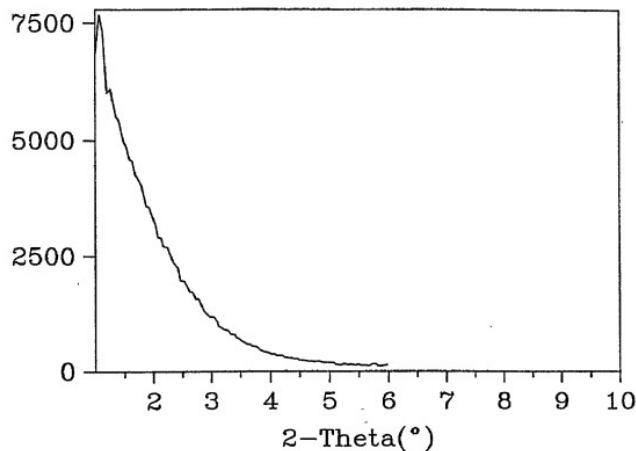


Fig. 8a

TRADE SECRETS

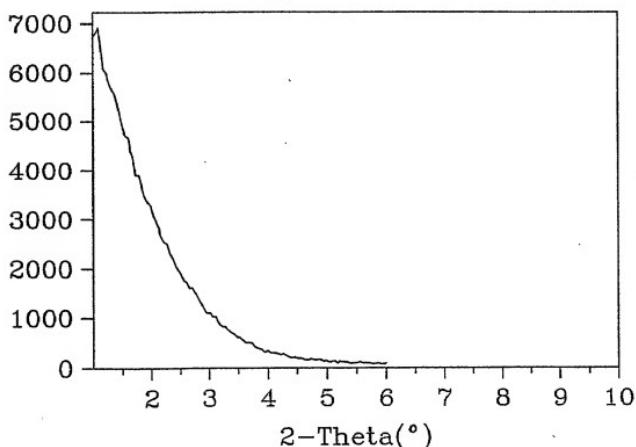


Fig. 8b

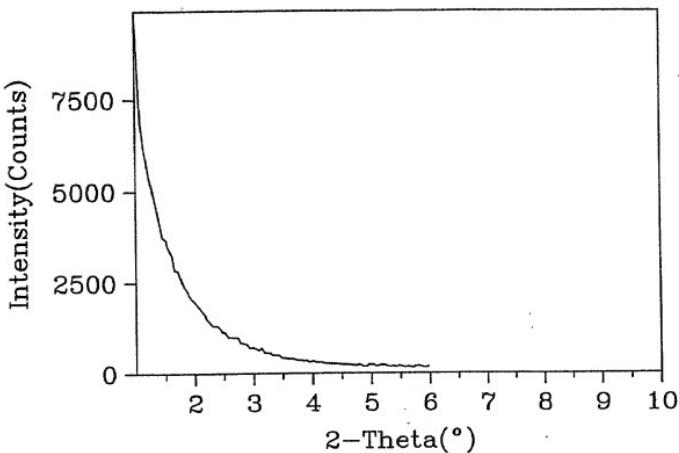


Fig. 9a

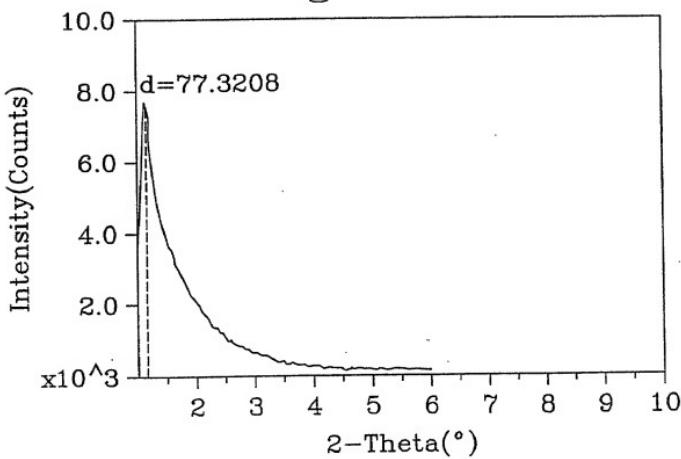


Fig. 9b

In re patent application: Jun Liu, et al

Invention: MESOPOROUS SILICA FILM FROM
SOLUTION CONTAINING A SURFACTANT AND
METHODS OF MAKING SAME

Filing Date: April 18, 2000

Page 10 of 14

Marger Johnson & McCollom, P.C.

1030 S.W. Morrison

Portland, OR 97205

(503) 222-3613

Attorney's Do. No. 1941-76

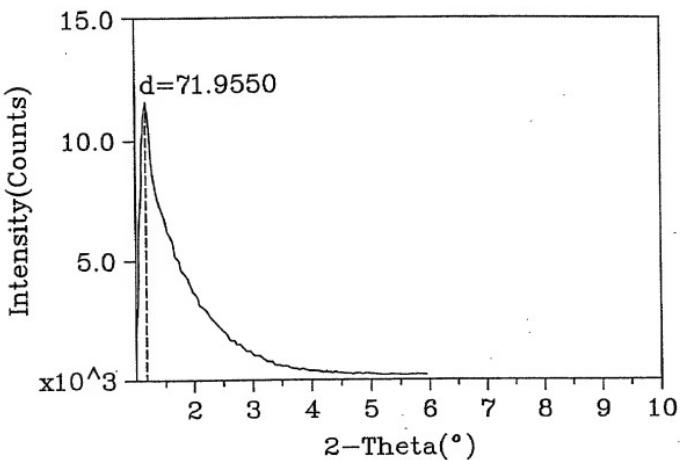


Fig. 10a

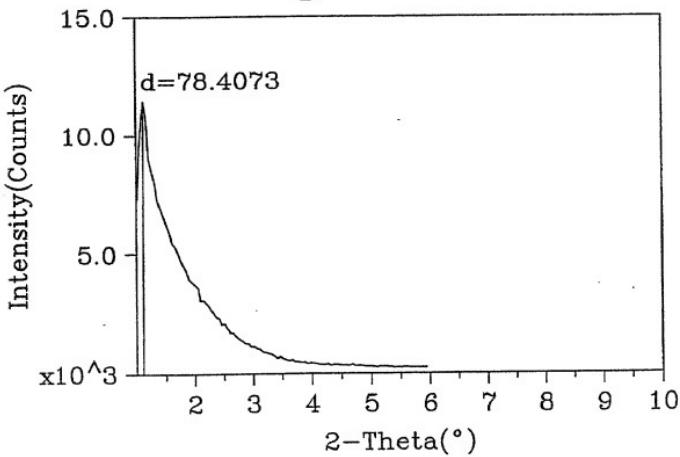


Fig. 10b

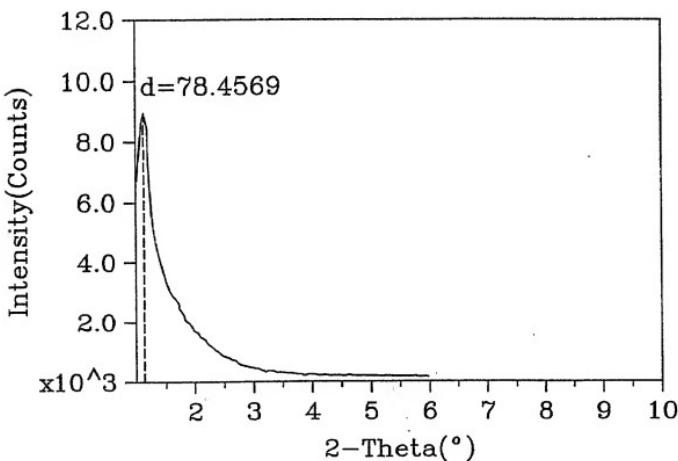


Fig. 11a

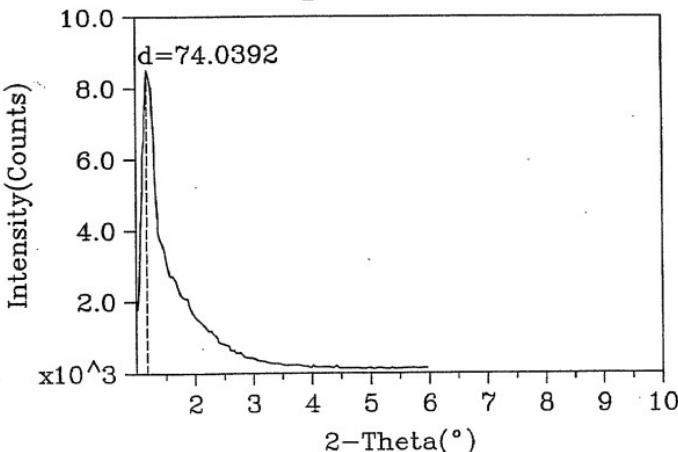


Fig. 11b

In re patent application: Jun Liu, et al

Invention: MESOPOROUS SILICA FILM FROM
SOLUTION CONTAINING A SURFACTANT AND
METHODS OF MAKING SAME

Filing Date: April 18, 2000

Page 12 of 14

Marger Johnson & McCollom, P.C.

1030 S.W. Morrison

Portland, OR 97205

(503) 222-3613

Attorney's Do. No. 1941-76

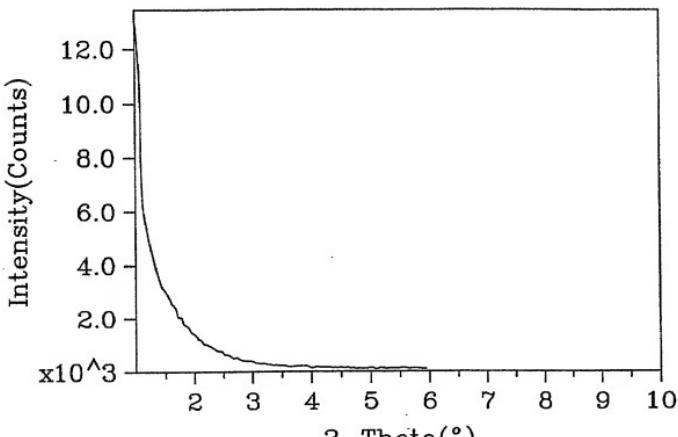


Fig. 12a

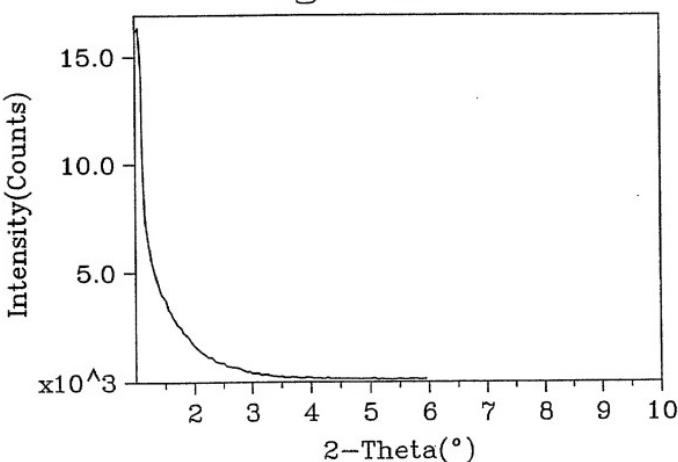


Fig. 12b

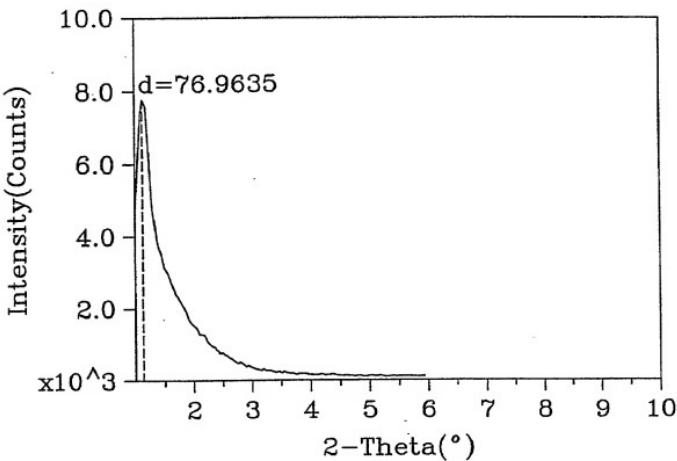


Fig. 12c

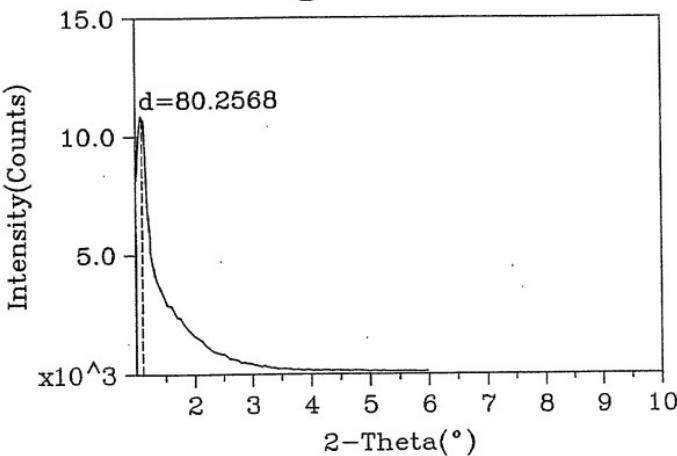
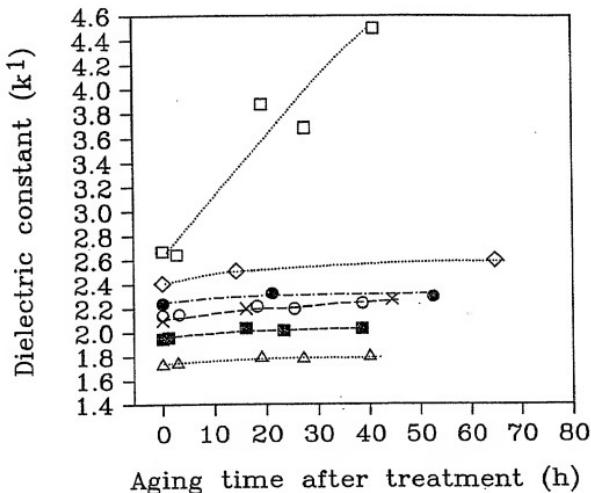


Fig. 12d



- 2%H₂,2h,400°C (103-2-1-B1)
- ◇ HMDS (L)>>2%H₂,2h,400°C (XL-92-2)
- HMDS (L)>>2%H₂,2h,400°C>>HMDS(L) (103-2-I-A1)
- △ HMDS (L)>>2%H₂,2h,400°C>>HMDS(L)>>2%H₂,2h,400°C (103-2-I-A2)
- HMDS (L)>>Ar,2h,400°C (103-2-1-B2)
- HMDS (L)>>Ar,2h,400°C>>HMDS(L)>>Ar,2h,400°C (112-1-III-D2)
- × HMDS spin coat>>2%H₂,2h,400°C>>HMDS spin coat>>2%H₂,2h,400°C (103-2-1-C1)

Fig. 13